

WINTER SKID AVOIDANCE

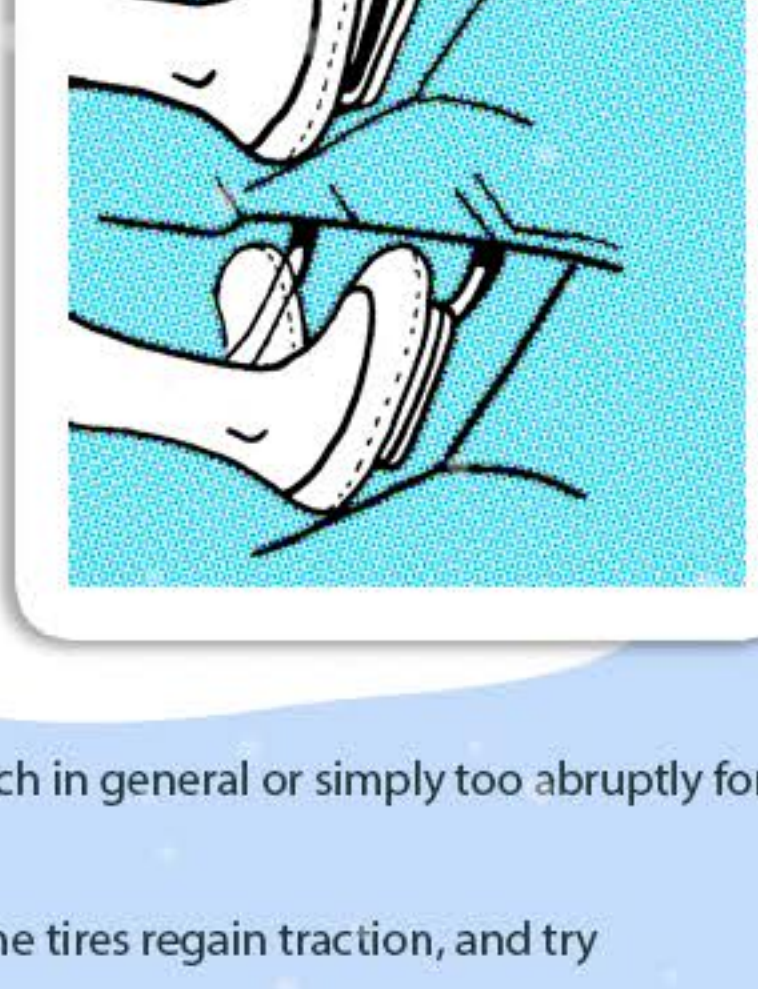
No matter what kind of car you're driving, you'll eventually experience some kind of skid on the snow or the ice. Knowing how to react is the difference between motoring happily on your way and ending up against the guardrail – or worse.

Team O'Neil's Wyatt Knox takes us through each type of skid and how to react correct for them.

1. Wheel Spin



*Front-Wheel Drive shown



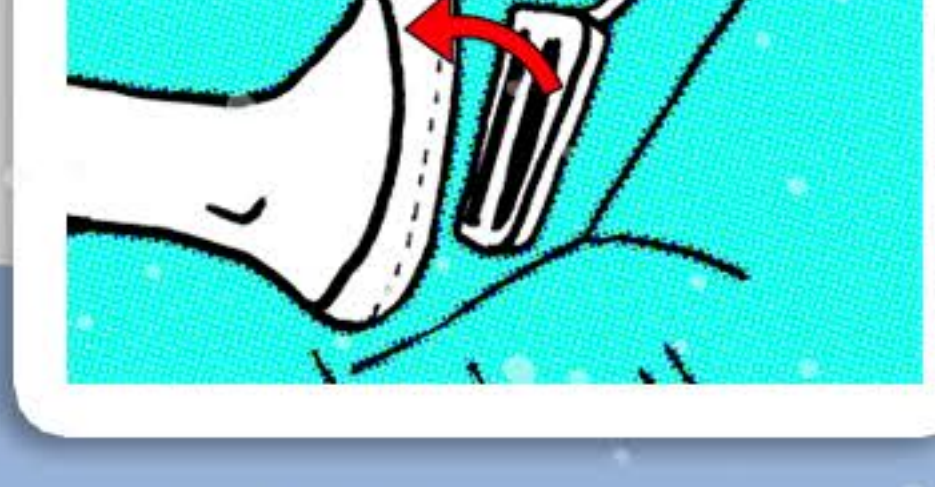
Wheelspin is caused by attempting to accelerate too much in general or simply too abruptly for the amount of traction available.

Wheelspin is the easiest skid to correct: simply lift until the tires regain traction, and try accelerating again more gently and gradually.

Most modern vehicles are equipped with Traction Control, which is a system designed to cancel wheelspin by either electronically cutting the throttle, applying the brakes to spinning wheels individually, or both. When a traction control equipped vehicle won't climb a snowy hill, turn off the traction control and use a bit of wheelspin to get to the top.

Finding a safe area to practice wheelspin with the traction control off, so you're familiar with the feedback you'll get from your particular vehicle.

2. Wheel Lockup

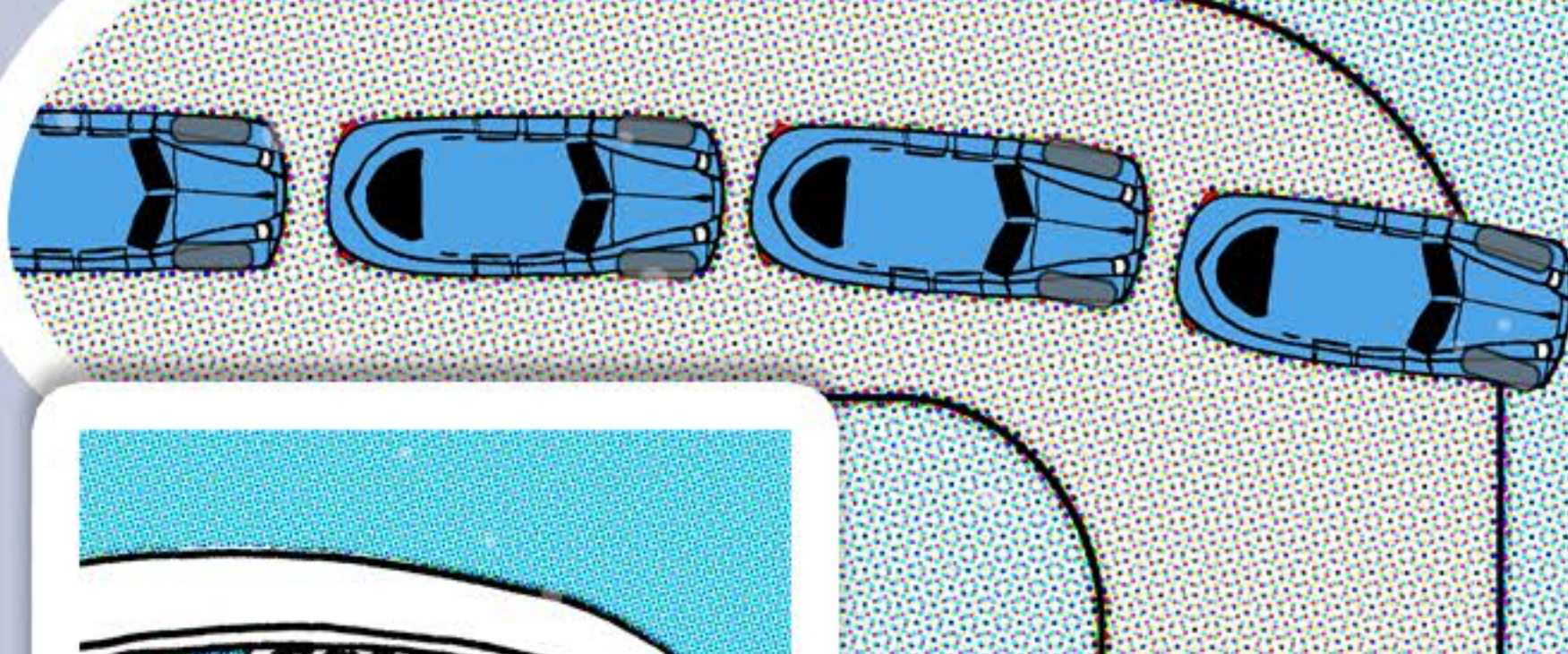


Wheel Lockup is caused by braking too hard or suddenly for the amount of grip available to your tires. Your tires will be stopped while your vehicle is still moving.

The solution is simple: releasing brake pressure will allow the wheels to turn again.

On a very slippery road, you may need to release the brakes almost completely and then try braking more gently and gradually. **Don't "pump the brakes,"** especially if your car is equipped with ABS. With ABS, it's best to keep hard brake pressure applied and let it work its magic.

3. Understeer



Understeer is a condition where the driver has turned the steering wheel, and the car fails to respond and continues travelling straight. Several things can cause understeer:

Too much speed for conditions – You've already made a big mistake, if you're trying to take a corner faster than physics will allow. Stay off the gas, look where you want to go, ride the brakes gently, pray to the God of your choice (or all of them) and hope you get lucky. If this fails, look for the best/softest place to crash and go there.

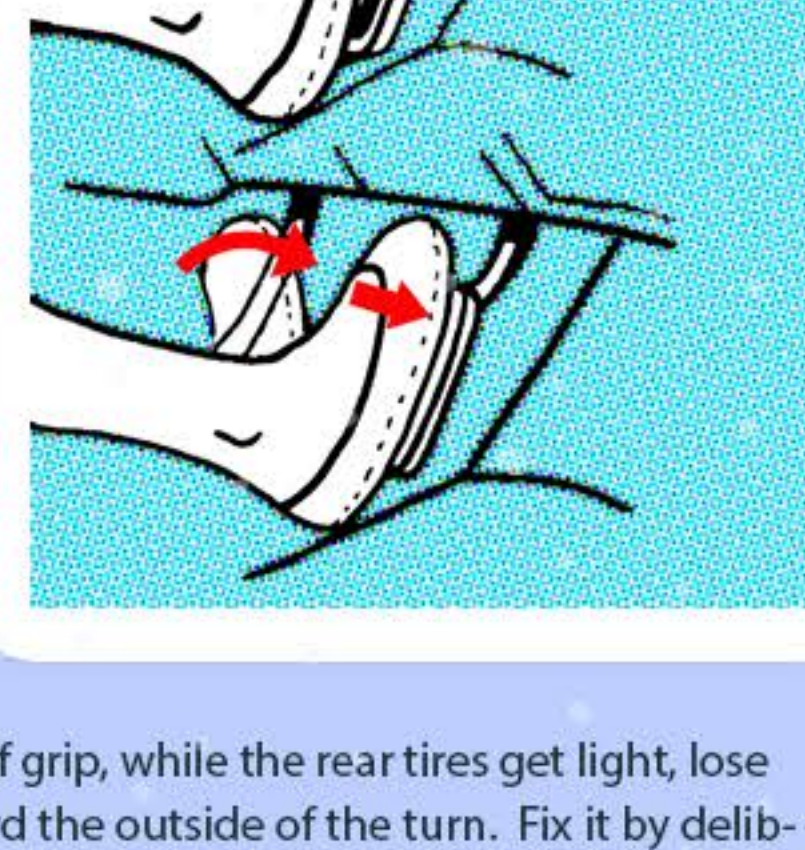
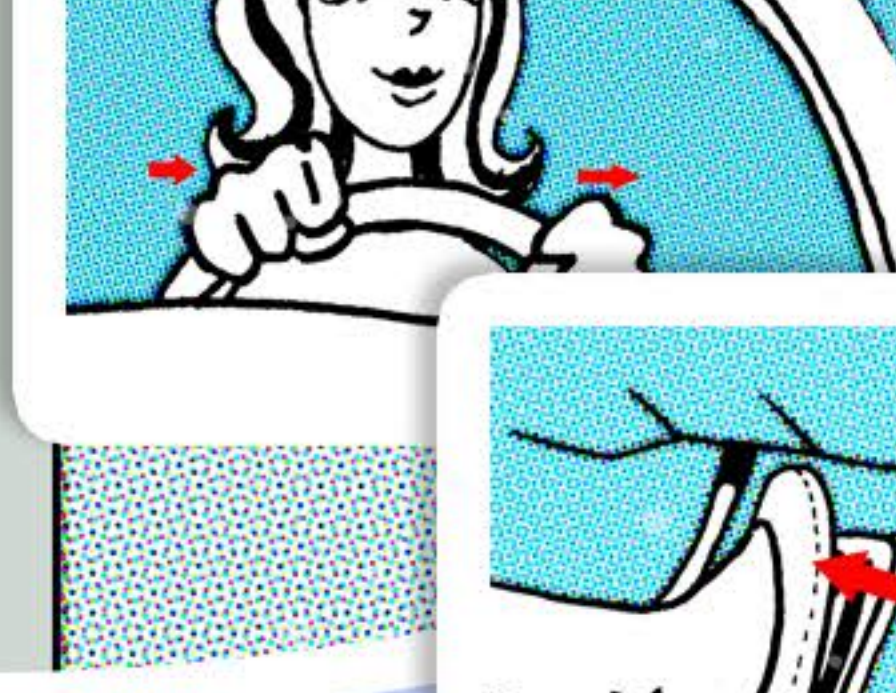
Weight transfer understeer – If you're accelerating aggressively, especially uphill or in a powerful car, all of the weight has transferred to the rear tires and there's no weight on the front where the wheels are turned. Lift off the throttle to get weight forward and the car will turn.

Wheelspin understeer – If the front tires are spinning in a front wheel drive or all-wheel drive vehicle, they won't be able to perform the task of steering the vehicle. Cure the wheelspin by lifting, and your steering will come back.

Wheel lockup understeer – If you're braking aggressively, there's a chance that the tires are locked up. If they are, your steering abilities will be compromised, release the brakes to allow the tires to roll again and your steering abilities will return.

Excessive steering angle – When you feel the car understeer, you may have the instinct to keep turning the steering wheel more and more. This instinct is wrong! If you have the wheels turned to full lock and the vehicle is still going straight, taking some of that steering back out will cure the understeer.

4. Oversteer



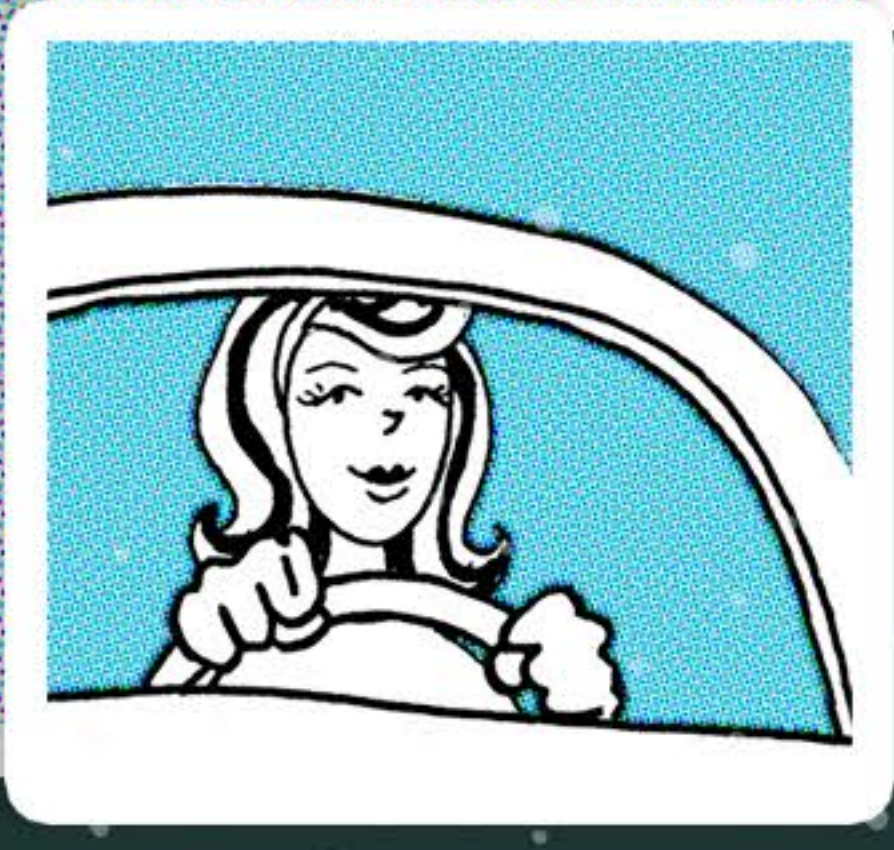
Oversteer is a condition where the rear tires have lost grip and have caused the whole car to rotate at an angle to your intended direction of travel. There's no one "quick fix" for all oversteer skids, the key here is to determine what caused the oversteer and take appropriate action.

Weight transfer oversteer – This happens when you shift too much weight onto the front tires while in a corner. Sudden lifting or braking can make this happen, the front tires bite in and get a ton of grip, while the rear tires get light, lose their contact patch, and the back of the car slides toward the outside of the turn. Fix it by deliberately looking down the road where you'd like to go. Next, you need to steer right where you're looking and no more. This corrective steering action is called "countersteer". Release brake pressure and apply some throttle if necessary to get grip onto the rear tires again, and the car should straighten out.

Wheelspin oversteer – In a rear wheel drive and some all-wheel drive vehicles, it's possible to get wheelspin while in a corner. This throttle-induced loss of grip on the rear tires is referred to as wheelspin oversteer. The correction is simple enough: look where you want to go, countersteer, and release the throttle enough to stop the rear tires from spinning.

Wheel lockup oversteer – If the rear tires of the vehicle lockup while in a corner, such as if you pulled the handbrake, again look where you'd like to go, countersteer, and release whatever brake caused the skid.

5. Counterskid



A counterskid is what happens when the car is in an oversteer skid and the driver takes corrective action too late or too aggressively to bring the rear of the car in line on the first try. The back of the car will swing back across the straight ahead position so it is now oversteering in the opposite direction.

A counterskid is what happens when you don't correct for an oversteer skid properly, you correct too late, or you overcorrect. The car will go from oversteering one way to oversteering the other way, back and forth until you either regain control, spin out, or crash. You've probably heard this also referred to as "fishtailing."

Too much steering – When you're in an oversteer skid and you add countersteer to correct, it's easy to go a little too far with the steering. This is the most common cause of a counterskid, and when this happens to you, just countersteer appropriately for the second skid and get the wheel centered again when the car straightens out.

Eyes not up – Chances are that if your steering inputs are messed up, that your eyes are in the wrong place to begin with. As the car slides back and forth, your only chance of getting it back under control is to look very deliberately where you want to end up and keep your focus on that point. Your hand-eye coordination that you've been naturally developing over the course of your life will take over and you'll have a good chance of saving it. If you're looking at trees and guardrails and phone poles as the car slides around, you can probably guess the results.